

PROJECT NUMBER: 1307
PROJECT TITLE: Reconstituted Tobacco Development
PROJECT LEADER: R. G. Uhl
PERIOD COVERED: October, 1987

I. IMPROVED SHEET PROPERTIES

A. Objective: Improve the physical characteristics and blend performance of reconstituted sheet materials.

B. Results:

1. ART Project - Spent stems (unwashed bright) from the ART pilot plant were used to replace 35% of the bright stems in pilot RL feedstock. Subjective screening of handmade 23% cigarettes showed some detectable subjective differences versus controls, particularly with 150B sheet. Machine-made Marlboro blends will be used for more extensive evaluation. Additional pilot sheets are being made from other ART stem lots (same stem type) to determine subjective consistency.

In order to determine whether there is a subjective impact of ART stems attributable to monopotassium citrate, pilot RL was made in TC, 150B and Modified 150B formulations with citrate added to the size. Citrate levels simulated replacing 1/3, 2/3 and all of the bright stems in normal RL feedstock with ART stems. Handmade cigarettes were submitted for subjective screening.

The effect of citrate on RL fiber processing was evaluated by adding monopotassium citrate to process liquors (SBW, RBW) and fiber chests. Both test and control were targeted at 12% baseweb HWS to approximate Park 500. Citrate to HWS ratios were maintained at an elevated level, equivalent to replacing all bright stems in the feedstock with ART stems. There was a slight increase in sheet adhesion to the Yankee Dryer. Sheet tensile strength was somewhat lower, but additional testing will be required to determine statistical significance. There were no measurable differences in paper machine moisture profile, fines retention or drainage rates. The system developed several leaks at threaded fittings, gaskets and pump seals. This is attributed to a cleaning action on sediments due to the slight acidity and considerable chelating properties of citrate.

None of the pilot RL sheets made using ART pilot plant spent stems or having added monopotassium citrate have shown the appearance of surface salts during sheet equilibration. This has been noted only with sheets made from the Bremen-3 stems.

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